

WHAT IS CLAIMED IS:

1 1. A method for use in a radio access network of a first operator network having
 2 cells which are eligible for utilization by a user equipment unit which is in a connected
 3 mode and which subscribes to a second operator network, the method comprising:
 4 designating as a restricted cell any cell of the first operator network for which
 5 the second operator network has a competing cell; and
 6 rejecting attempted utilization by the user equipment unit which subscribes to
 7 the second operator network of the restricted cell.

1 2. The method of claim 1, wherein, with respect to the user equipment unit
 2 which subscribes to the second operator network, the step of rejecting comprises
 3 rejecting one of (1) handover to the restricted cell, and (2) cell/URA updating by the
 4 user equipment unit via the restricted cell.

1 3. The method of claim 2, wherein the user equipment unit is in one of a
 2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 4. The method of claim 2, wherein when the second operator network attempts
 2 to perform a handover to a target cell of the first operator network with respect to the
 3 user equipment unit which subscribes to the second operator network, the method
 4 further comprises:
 5 obtaining an international mobile subscriber identity (IMSI) of the user
 6 equipment unit and an identification of the target cell;
 7 using the IMSI to determine at the first operator network whether the target cell
 8 is a restricted cell; and if so;
 9 rejecting the handover.

1 5. The method of claim 4, further comprising:
 2 obtaining the international mobile subscriber identity (IMSI) of the user
 3 equipment unit and the identification of the target cell from a source radio network
 4 controller of an initiating operator network;
 5 determining at a controlling radio network controller of the first operator
 6 network whether the target cell is a restricted cell.

1 6. The method of claim 5, wherein the user equipment unit is in a cell_DCH
2 state, further comprising obtaining the international mobile subscriber identity (IMSI)
3 of the user equipment unit and the identification of the target cell from a RL SETUP
4 REQUEST message issued by the source radio network controller of the initiating
5 operator network.

1 7. The method of claim 5, wherein the step of determining at the controlling
2 radio network controller of the first operator network whether the target cell is a
3 restricted cell comprises:
4 obtaining a operator network code from the IMSI of the user equipment unit;
5 consulting a table maintained by the controlling radio network controller to
6 determine whether the target cell is eligible for handover for the user equipment unit on
7 the basis of the obtained PLMN code.

1 8. The method of claim 2, wherein when an initiating operator network attempts
2 to perform moveover of a SRNC role to a radio network controller of the first operator
3 network, the method further comprises:
4 obtaining, from a core network, an international mobile subscriber identity
5 (IMSI) of the user equipment unit and an identification of the target cell;
6 determining at the first operator network whether the target cell is a restricted
7 cell; and if so;
8 notifying the core network that the moveover is rejected .

1 9. The method of claim 8, further comprising obtaining the international mobile
2 subscriber identity (IMSI) of the user equipment unit and the identification of the target
3 cell in a RELOCATION REQUEST message from the core network.

1 10. The method of claim 8, further comprising determining at a controlling
2 radio network controller of the first operator network whether the target cell is a
3 restricted cell.

1 11. The method of claim 10, wherein the step of determining at the controlling
2 radio network controller of the first operator network whether the target cell is a
3 restricted cell comprises:
4 obtaining a PLMN code from the IMSI of the user equipment unit;

5 consulting a table maintained by the controlling radio network controller to
6 determine whether the target cell is eligible for handover for the user equipment unit on
7 the basis of the obtained PLMN code.

1 12. The method of claim 8, wherein the user equipment unit is in one of a
2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 13. The method of claim 2, wherein when the user equipment unit attempts to
2 perform a cell/URA update relative to a target cell of the first operator network, the
3 method further comprises:

4 obtaining an international mobile subscriber identity (IMSI) of the user
5 equipment unit and an identification of the target cell;

6 determining at the first operator network whether the target cell is a restricted
7 cell; and if so;

8 rejecting the update is rejected.

1 14. The method of claim 13, further comprising:

2 obtaining the international mobile subscriber identity (IMSI) of the user
3 equipment unit and the identification of the target cell from a source radio network
4 controller of an initiating operator network;

5 determining at a controlling radio network controller of the first operator
6 network whether the target cell is a restricted cell.

1 15. The method of claim 14, wherein the user equipment unit is in one of a
2 cell_FACH state and a cell_PCH state, and further comprising obtaining the
3 international mobile subscriber identity (IMSI) of the user equipment unit and the
4 identification of the target cell from a COMMON TRANSPORT CHANNEL
5 RESOURCES REQUEST message issued by the source radio network controller of the
6 initiating operator network.

1 16. The method of claim 14, wherein the step of determining at the controlling
2 radio network controller of the first operator network whether the target cell is a
3 restricted cell comprises:

4 obtaining a PLMN code from the IMSI of the user equipment unit;

consulting a table maintained by the controlling radio network controller to determine whether the target cell is eligible for handover for the user equipment unit on the basis of the obtained PLMN code.

17. The method of claim 14, further comprising generating a message which rejects the cell update and advises that the cell is restricted.

18. The method of claim 1, wherein the attempted utilization by the user equipment unit which subscribes to the second operator network of the restricted cell is a attempted cell reselection by the user equipment unit , and further comprising transmitting an identification of the restricted cell from the first operator network to the user equipment unit .

19. The method of claim 18, further comprising transmitting the identification of the restricted cell from the first operator network to the user equipment unit upon an attempted location registration by the user equipment unit .

20. The method of claim 18, further comprising transmitting the identification of the restricted cell from the first operator network to the user equipment unit when transmitting a message to the user equipment unit which rejects an attempted cell update by the user equipment unit .

21. A radio access network of a first operator network having cells which are eligible for utilization by a user equipment unit which is in a connected mode and which subscribes to a second operator network; the radio access network comprising:
means for designating as a restricted cell any cell of the first operator network for which the second operator network has a competing cell;
means for rejecting attempted utilization by the user equipment unit which subscribes to the second operator network of the restricted cell.

22. The apparatus of claim 21, wherein with respect to the user equipment unit which subscribes to the second operator network, the means for rejecting rejects one of (1) handover to the restricted cell, and (2) cell/URA updating by the user equipment unit via the restricted cell.

1 23. The apparatus of claim 22, wherein the user equipment unit is in one of a
2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 24. The apparatus of claim 22, wherein an initiating operator network attempts
2 to perform a handover to a target cell of the first operator network with respect to the
3 user equipment unit which subscribes to the second operator network, the apparatus
4 further comprises:

5 means for obtaining, from the initiating operator network, an international
6 mobile subscriber identity (IMSI) of the user equipment unit and an identification of the
7 target cell;

8 means for using the IMSI to determine at the first operator network whether the
9 target cell is a restricted cell; and if so;

10 means for rejecting the handover.

1 25. The apparatus of claim 24, wherein the means for obtaining obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell from a source radio network controller of the initiating
4 operator network, and wherein the means for using the IMSI to determine whether the
5 target cell is a restricted cell is situated at a controlling radio network controller of the
6 first operator network.

1 26. The apparatus of claim 25, wherein the user equipment unit is in a
2 cell_DCH state, and wherein the means for obtaining obtains the international mobile
3 subscriber identity (IMSI) of the user equipment unit and the identification of the target
4 cell from a RL SETUP REQUEST message issued by the source radio network
5 controller of the initiating operator network.

1 27. The apparatus of claim 25, wherein the means for using the IMSI to
2 determine whether the target cell is a restricted cell comprises:

3 means for obtaining a PLMN code from the IMSI of the user equipment unit;
4 a table maintained by the controlling radio network controller which is consulted
5 to determine whether the target cell is eligible for handover for the user equipment unit
6 on the basis of the obtained PLMN code.

1 28. The apparatus of claim 22, wherein an initiating operator network attempts
2 to perform relocation of a SRNC role to a radio network controller of the first operator
3 network, and wherein the apparatus further comprises:

4 means for obtaining, from a core network, an international mobile subscriber
5 identity (IMSI) of the user equipment unit and an identification of the target cell;

6 means for determining at the first operator network whether the target cell is a
7 restricted cell; and if so;

8 means for notifying the core network that the relocation is rejected .

1 29. The apparatus of claim 28, wherein the means for obtaining obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell in a RELOCATION REQUEST message from the core
4 network.

1 30. The apparatus of claim 28, wherein the means for determining is situated at
2 a controlling radio network controller of the first operator network.

1 31. The apparatus of claim 30, wherein the means for determining whether the
2 target cell is a restricted cell comprises:

3 means for obtaining a PLMN code from the IMSI of the user equipment unit;

4 a table maintained by the controlling radio network controller which is consulted
5 to determine whether the target cell is eligible for handover for the user equipment unit
6 on the basis of the obtained PLMN code.

1 32. The apparatus of claim 28, wherein the user equipment unit is in one of a
2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 33. The apparatus of claim 22, wherein the user equipment unit attempts to
2 perform a cell/URA update with respect to a target cell of the first operator network,
3 and wherein the apparatus further comprises:

4 means for obtaining, from an initiating operator network, an international mobile
5 subscriber identity (IMSI) of the user equipment unit and an identification of the target
6 cell;

7 means for determining at the first operator network whether the target cell is a
8 restricted cell; and if so;

means for providing a notification that the update is rejected.

34. The apparatus of claim 33, wherein the means for obtaining obtains the international mobile subscriber identity (IMSI) of the user equipment unit and the identification of the target cell from a source radio network controller of the second operator network; and wherein the means for determining is situated at a controlling radio network controller of the first operator network.

35. The apparatus of claim 34, wherein the user equipment unit is in one of a cell_FACH state and a cell_PCH state, and wherein the means for obtaining obtains the international mobile subscriber identity (IMSI) of the user equipment unit and the identification of the target cell from a COMMON TRANSPORT CHANNEL RESOURCES REQUEST message issued by the source radio network controller of the second operator network.

36. The apparatus of claim 34, wherein the means for determining whether the target cell is a restricted cell comprises:
means for obtaining a PLMN code from the IMSI of the user equipment unit;
a table maintained by the controlling radio network controller which is consulted to determine whether the target cell is eligible for handover for the user equipment unit on the basis of the obtained PLMN code.

37. The apparatus of claim 34, further comprising means for generating a message which rejects the update and advises that the target cell is restricted.

38. The apparatus of claim 21, wherein the attempted utilization by the user equipment unit which subscribes to the second operator network of the restricted cell is an attempted cell reselection by the user equipment unit , and further comprising means for transmitting an identification of the restricted cell from the first operator network to the user equipment unit .

39. The apparatus of claim 38, wherein the means for transmitting the identification of the restricted cell from the first operator network to the user equipment unit transmits upon an attempted location registration by the user equipment unit .

1 40. The apparatus of claim 38, wherein the means for transmitting the
2 identification of the restricted cell from the first operator network to the user equipment
3 unit transmits the identification of the restricted cell when transmitting a message to the
4 user equipment unit which rejects an attempted cell update by the user equipment unit.

1 41. A radio access network of a first operator network, the network comprising:
2 at least one base station having a radio frequency signal monitored by a user
3 equipment unit, the user equipment unit being in a connected mode and subscribing to a
4 second operator network;
5 a control node which controls the at least one base station;
6 a PLMN filter which rejects attempted utilization, by the user equipment unit
7 which subscribes to the second operator network, of a restricted cell of the first operator
8 network, the restricted cell being a cell of the first operator network for which the
9 second operator network has a competing cell.

1 42. The apparatus of claim 41, wherein with respect to the user equipment unit
2 which subscribes to the second operator network, the PLMN filter rejects one of (1)
3 handover to the restricted cell, and (2) cell/URA updating by the user equipment unit
4 via the restricted cell.

1 43. The apparatus of claim 42, wherein PLMN filter operates when the user
2 equipment unit is in one of a cell_DCH state, a cell_FACH state, a cell_PCH state, and
3 a URA_PCH state.

1 44. The apparatus of claim 42, wherein when an initiating operator network
2 attempts to perform a handover to a target cell of the first operator network with respect
3 to the user equipment unit which subscribes to the second operator network, the PLMN
4 filter:

5 obtains, from the initiating operator network, an international mobile subscriber
6 identity (IMSI) of the user equipment unit and an identification of the target cell;

7 uses the IMSI to determine at the first operator network whether the target cell is
8 a restricted cell; and if so;

9 notifies the initiating operator network that the handover is rejected .

1 45. The apparatus of claim 44, wherein the PLMN filter obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell from a source radio network controller of the initiating
4 operator network, and wherein the PLMN filter uses the IMSI to determine whether the
5 target cell is a restricted cell is situated at a controlling radio network controller of the
6 first operator network.

1 46. The apparatus of claim 45, wherein the user equipment unit is in a
2 cell_DCH state, and wherein the PLMN filter obtains the international mobile
3 subscriber identity (IMSI) of the user equipment unit and the identification of the target
4 cell from a RL SETUP REQUEST message issued by the source radio network
5 controller of the initiating operator network.

1 47. The apparatus of claim 45, wherein the PLMN filter obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the PLMN filter comprises a
3 table which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 48. The apparatus of claim 42, wherein when the initiating operator network
2 attempts to perform moveover of a SRNC role to a radio network controller of the first
3 operator network, the PLMN filter:
4 obtains, from a core network, an international mobile subscriber identity (IMSI)
5 of the user equipment unit and an identification of the target cell;
6 determines whether the target cell is a restricted cell; and if so;
7 notifies the core network that the moveover is rejected .

1 49. The apparatus of claim 48, wherein the PLMN filter obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell in a RELOCATION REQUEST message from the core
4 network.

1 50. The apparatus of claim 48, wherein the PLMN filter is situated at a
2 controlling radio network controller of the first operator network.

1 51. The apparatus of claim 50, wherein the PLMN filter obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the PLMN filter comprises a
3 table which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 52. The apparatus of claim 48, wherein the user equipment unit is in one of a
2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 53. The apparatus of claim 42, wherein when the user equipment unit attempts
2 to perform a cell/URA update with respect to a target cell of the first operator network,
3 the PLMN filter:

4 obtains an international mobile subscriber identity (IMSI) of the user equipment
5 unit and an identification of the target cell;

6 determines whether the target cell is a restricted cell; and if so;

7 provides a notification that the update is rejected.

1 54. The apparatus of claim 53, wherein the PLMN filter obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell from a source radio network controller of an initiating
4 operator network; and wherein the PLMN filter is situated at a controlling radio
5 network controller of the first operator network.

1 55. The apparatus of claim 54, wherein the user equipment unit is in one of a
2 cell_FACH state and a cell_PCH state, and wherein the PLMN filter obtains the
3 international mobile subscriber identity (IMSI) of the user equipment unit and the
4 identification of the target cell from a COMMON TRANSPORT CHANNEL
5 RESOURCES REQUEST message issued by the source radio network controller of the
6 initiating operator network.

1 56. The apparatus of claim 54, wherein the PLMN filter obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the PLMN filter comprises a
3 table which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 57. The apparatus of claim 54, wherein the PLMN filter generates a message
2 which rejects the update and advises that the target cell is restricted.

1 58. A control node of a radio access network of a first operator network which
2 rejects attempted utilization, by a user equipment unit which subscribes to the second
3 operator network, of a restricted cell of the first operator network, the restricted cell
4 being a cell of the first operator network for which the second operator network has a
5 competing cell.

1 59. The apparatus of claim 58, wherein with respect to the user equipment unit
2 which subscribes to the initiating operator network, the control node rejects one of (1)
3 handover to the restricted cell, and (2) cell/URA updating by the user equipment unit
4 via the restricted cell.

1 60. The apparatus of claim 59, wherein the control node rejects the attempted
2 utilization when the user equipment unit is in one of a cell_DCH state, a cell_FACH
3 state, a cell_PCH state, and a URA_PCH state.

1 61. The apparatus of claim 59, wherein when an initiating operator network
2 attempts to perform a handover to a target cell of the first operator network with respect
3 to the user equipment unit which subscribes to the second operator network, the control
4 node:

5 obtains an international mobile subscriber identity (IMSI) of the user equipment
6 unit and an identification of the target cell;

7 uses the IMSI to determine at the first operator network whether the target cell is
8 a restricted cell; and if so;

9 notifies the initiating operator network that the handover is rejected .

1 62. The apparatus of claim 61, wherein the control node obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell from a source radio network controller of the initiating
4 operator network, and wherein the control node uses the IMSI to determine whether the
5 target cell is a restricted cell is situated at a controlling radio network controller of the
6 first operator network.

1 63. The apparatus of claim 62, wherein the user equipment unit is in a
2 cell_DCH state, and wherein the control node obtains the international mobile
3 subscriber identity (IMSI) of the user equipment unit and the identification of the target
4 cell from a RL SETUP REQUEST message issued by the source radio network
5 controller of the initiating operator network.

1 64. The apparatus of claim 62, wherein the control node obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the control node has a table
3 (110) which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 65. The apparatus of claim 59, wherein when an initiating operator network
2 attempts to perform relocation of a SRNC role to a radio network controller of the first
3 operator network, the control node:
4 obtains, from a core network, an international mobile subscriber identity (IMSI)
5 of the user equipment unit and an identification of the target cell;
6 determines whether the target cell is a restricted cell; and if so;
7 notifies the core network that the relocation is rejected .

1 66. The apparatus of claim 65, wherein the control node obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell in a RELOCATION REQUEST message from the core
4 network.

1 67. The apparatus of claim 65, wherein the control node is a controlling radio
2 network controller of the first operator network.

1 68. The apparatus of claim 67, wherein the control node obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the control node comprises a
3 table which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 69. The apparatus of claim 65, wherein the user equipment unit is in one of a
2 cell_DCH state, a cell_FACH state, a cell_PCH state, and a URA_PCH state.

1 70. The apparatus of claim 59, wherein when the user equipment unit attempts
2 to perform a cell/URA update relative to a target cell of the first operator network, the
3 control node:

4 obtains an international mobile subscriber identity (IMSI) of the user equipment
5 unit and an identification of the target cell;

6 determines whether the target cell is a restricted cell; and if so;

7 provides a notification that the update is rejected.

1 71. The apparatus of claim 70, wherein the control node obtains the
2 international mobile subscriber identity (IMSI) of the user equipment unit and the
3 identification of the target cell from a source radio network controller of an initiating
4 operator network; and wherein the control node is a controlling radio network controller
5 of the first operator network.

1 72. The apparatus of claim 71, wherein the user equipment unit is in one of a
2 cell_FACH state and a cell_PCH state, and wherein the control node obtains the
3 international mobile subscriber identity (IMSI) of the user equipment unit and the
4 identification of the target cell from a COMMON TRANSPORT CHANNEL
5 RESOURCES REQUEST message issued by the source radio network controller of the
6 initiating operator network.

1 73. The apparatus of claim 71, wherein the control node obtains a PLMN code
2 from the IMSI of the user equipment unit; and wherein the control node comprises a
3 table which is consulted to determine whether the target cell is eligible for handover for
4 the user equipment unit on the basis of the obtained PLMN code.

1 74. The apparatus of claim 71, wherein the control node generates a message
2 which rejects the update and advises that the target cell is restricted.

1 75. A mobile terminal which subscribes to a native operator network and which,
2 in a connected mode and prior to cell reselection to a target cell, checks whether the
3 target cell is a restricted cell, the restricted cell being both operated by a foreign
4 operator network and competing with a cell operated by the native operator network.

